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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/507,016

07/18/2005

Masanobu Sugimoto

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6554

23117 7590 12/15/2008  
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EXAMINER

COLE, ELIZABETH M

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/507,016	<b>Applicant(s)</b> SUGIMOTO ET AL.	
	<b>Examiner</b> Elizabeth M. Cole	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. {Uchida} (WO 01/47824 A1) with evidence from Bicerano (*Predication of Polymer Properties*) and Furukawa (*Physical Chemistry of Polymer Rheology*).

Uchida teaches a coated optical fiber comprising an outer coating layer cured with a liquid composition comprising a urethane methacrylate, a polymerizable monomer of methacrylate-type, and initiator ({Uchida} Claim 1 | C3:L32-44). The amount of urethane methacrylate (A) is preferably 30- to 90-% ({Uchida} P8:L10-14). The amount of polymerizable monomer (B) ranges from preferably 1- to 60-%. The photoinitiator (C) ranges from 0.1- to 10-% ({Uchida} P9:L26-28). Specific compositions are reported too ({Uchida} Table 1). Regarding Claims 4 & 5, the urethane methacrylate is based on a polyether based polyol, a diisocyanate, and a hydroxyl group-containing meth(acrylate) ({Uchida} P3:L4-14). Regarding Claims 6 & 7, as polyols for synthesizing urethane (meth)acrylate, Uchida teaches polyether diols such as polypropylene glycol ({Uchida} P5:L14-19). Regarding Claims 7-9, bisphenol A is taught as a suitable alilcyclic polyether diol ({Uchida} P6:L13-16). Given the molecular weight of urethane meth(acrylate) and polyol precursors for synthesizing, a molecular weight of the polyol must be within the range claimed ({Uchida} P7:L28-P8:L3). Uchida

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teaches that temperature affects the modulus too ({Uchida} P9:L29-34). Thus, modulus is a result-effective variable based on at least polymer structure, polymer chemistry, and temperature and unpatentable as claimed.

Uchida is silent regarding the glass transition temperature and relaxation time of the compounds. The composition taught, however, is substantially similar to the claimed invention. It comprises overlapping ranges of the urethane methacrylate polyether backbone, a polymerizable monomer, photo initiator, and subsequent limiting compounds. Compositions of the same materials would exhibit a similar range of properties. Evidence of the correlation between the polymeric material and its glass transition and relaxation time are clear: 1) glass transition is affected factors including structural, chemistry, molecular weight, & morphology ({Bicerano} Pages 179 & 180); and 2) glass transition time appears to be the only non-constant or non-integer factor in a general estimation of the relaxation time of a polymer ({Furukawa} Pages 146, 149, & 150 | Eqs. 16.27 & 17.1). Since the same polymeric materials generally exhibit the same properties, the polymer compositions appear to have the same glass transition temperatures and stress relaxation times as the claimed invention.

At the time of the invention, it would have been obvious to claim glass transition and relaxation time for the substantially similar optical fiber liquid coating composition {Uchida An intrinsic feature need not be recognized at the time to satisfy prima facie obviousness. Motivation to optimize the composition is based on the performance through mechanical properties and surface characteristics ({Uchida} P1:L6-9 & P8:L29-

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33). Thus, it would have been obvious to follow the teaching by Uchida to obtain the curable liquid resin composition.

With regard to the claimed modulus of the first and second coating layers, Uchida teaches a first or primary coating which is flexible. A flexible material will have a low modulus. Uchida teaches a second coating as set forth above. Uchida teaches that the second coating should be rigid. See page 1, lines 12-16. Uchida teaches that the second coating should have a modulus of greater than 50 Mpa, preferably more than 200 Mpa, particularly preferably more than 400 MPa. See page 2, lines 29-30, page 12, lines 5-19. Examples 1 and 2 show a modulus of the second coating of 520 and 460 MPa. Therefore, Uchida teaches fibers which have a low modulus first coating and a high modulus second coating. While Uchida does not teach the claimed value of the primary coating modulus of less than 3 MPa at 23C , it would have been obvious to one of ordinary skill in the art to have selected a coating material which had a suitable flexibility in view of the teaching of Uchida that the primary coating layer should be flexible, (i.e., have a low modulus value).

1. Applicant's arguments filed 10/14/08 have been fully considered but they are not persuasive. Applicant's amendments and arguments have overcome all rejection which are not maintained from the first action.

2. With regard to Uchida, Applicant argues that Uchida does not teach the claimed primary coating having the claimed modulus. However, while Uchida does not teach the claimed modulus, Uchida does teach that the optical fibers should comprise a first or primary coating layer which is very flexible. Therefore, Uchida teaches a low modulus

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coating and it would have been obvious to one of ordinary skill in the art to have selected the primary coating so that it produced a very flexible coating or low modulus as taught by Uchida.

3. Applicant argues that Uchida does not teach the claimed glass transition temperatures and stress relaxation times claimed. However, as set forth above, Uchida appears to teach the same materials used for the same purpose as the claimed coating composition. Uchida teaches that the coating has a modulus of greater than 400 MPa. Uchida teaches the same components of the claimed coating composition. Therefore, it appears that the material of Uchida would necessarily have the same properties such as glass transition temperature and stress relaxation times since the same compositions would have the same properties.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

/Elizabeth M. Cole/  
Primary Examiner, Art Unit 1794

e.m.c